

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

HEADWATER RESEARCH LLC

*Plaintiff,*

v.

SAMSUNG ELECTRONICS CO., LTD and  
SAMSUNG ELECTRONICS AMERICA, INC.,

*Defendants.*

Case No. 2:22-CV-00422-JRG-RSP

**SAMSUNG'S DAUBERT MOTION AND  
MOTION TO STRIKE EXPERT TESTIMONY OF DR. ANDREAS GROEHN**

**TABLE OF CONTENTS**

I.	DR. GROEHN’S ANALYSIS .....	2
A.	Dr. Groehn Designed His “Battery Life” Conjoint Survey Based only on Input from Headwater’s Lawyers .....	2
B.	Dr. Groehn’s Conjoint Survey .....	2
C.	Dr. Groehn’s Conjoint Analysis .....	3
D.	Dr. Groehn’s Corrected Report.....	4
II.	LEGAL STANDARD.....	5
III.	ARGUMENT .....	6
A.	Conjoint Analysis Cannot Reliably Identify the Incremental Profit of One Feature in a Complex Product in a Complex Market.....	6
B.	Dr. Groehn’s Reasons for Correcting His Report Proves the Inherent Unreliability of His Conjoint Analysis .....	8
C.	Dr. Groehn’s Survey Was Divorced from the Patented Technology.....	10
D.	The Survey Is Unreliable Because “Standard” Battery Life Has No Objective Meaning.....	12
1.	Dr. Groehn’s Survey Did Not Define “Standard” Battery Life, Leaving Each Survey Respondent to Attribute Their Own, Subjective Meaning ..	13
2.	The Supposed Incremental Value of a “5%” Or “10%” Is Equally Vague, Rendering the Results Unreliable .....	14
IV.	Conclusion .....	15

## TABLE OF AUTHORITIES

<b>Cases</b>	<b>Page(s)</b>
<i>Apple, Inc. v. Samsung Elecs. Co.</i> , No. 12-CV-00630-LHK, 2014 WL 794328 (N.D. Cal Feb. 25, 2014).....	12
<i>Dart v. Kitchens Bros. Mfg. Co.</i> , 253 F. App'x 395 (5th Cir. 2007) .....	10
<i>Daubert v. Merrell Dow Pharms. Inc.</i> , 509 U.S. 579 (1993).....	1, 6, 10
<i>Fractus, S.A. v. Samsung</i> , No. 6:09-CV-203-LED-JDL, 2011 WL 7563820 (E.D. Tex. Apr. 29, 2011) .....	11, 12
<i>Matter of James Wilson Assoc.</i> , 965 F.2d 160 (7th Cir. 1992) .....	11
<i>Kumho Tire Co. v. Carmichael</i> , 526 U.S. 137 (1999).....	6, 10
<i>Oracle Am., Inc. v. Google Inc.</i> , No. C 10-03561 WHA, 2012 WL 850705 (N.D. Cal. Mar. 13, 2012) .....	16
<i>Unwired Planet, LLC v. Apple Inc.</i> , No. 14-cv-04134-VC, 2017 WL 589195 (N.D. Cal. Feb. 14, 2017) .....	12
<i>Virnetx, Inc. v. Cisco Sys., Inc.</i> , 767 F.3d 1308 (Fed. Cir. 2014).....	9, 16
<i>Visteon Glob. Techs., Inc. v. Garmin Int'l, Inc.</i> , No. 10-CV-10578, 2016 WL 5956325 (E.D. Mich. Oct. 14, 2016) .....	7, 8, 9
 <b>Other Authorities</b>	
Fed. R. Evid. 104(a).....	6
Fed. R. Evid. 702 .....	5, 6, 12

**EXHIBIT INDEX & NOTES**

<b>Exhibit</b>	<b>Description</b>
A	Amended Report of Dr. Andreas Groehn, dated April 22, 2024
B	Excerpts from the Deposition Transcript of Dr. Andreas Groehn (Rough), May 13, 2024
C	Excerpts from the Deposition Transcript of Mr. David Kennedy (Rough), May 14, 2024
D	Excerpts from Allenby et al. (2019), GROEHN_00000079
E	Excerpts from the Redlined version of the Amended Report of Dr. Andreas Groehn, as provided by Headwater's counsel on April 22, 2024
F	Errata Statement by Dr. Andreas Groehn, dated April 22, 2024
G	Exhibit 1 from the Expert Report of Mr. David Kennedy, March 29, 2024
H	Exhibit 1 from the Corrected Expert Report of Mr. David Kennedy, April 22, 2024
I	Excerpts from the Rebuttal Report of Dr. Dan Schonfeld, dated April 19, 2024

\* Emphasis added unless otherwise noted.

\*\* Form objections are omitted from deposition transcript quotations unless otherwise noted.

\*\*\* In this brief, "Headwater" refers to Plaintiff and its purported predecessors.

[REDACTED]

The Court should exclude the opinions of Headwater’s conjoint analysis expert, Dr. Andreas Groehn, because they are fundamentally improper and ultimately designed to confuse the jury. Specifically, Dr. Groehn’s conjoint analysis is inappropriate for patent damages valuation under *Daubert* because it is a tool for estimating **relative** consumer interest in a feature, not for computing specific market **prices** consumers would pay for that feature, let alone a benefit, of a complex smartphone. The fundamental unreliability in Dr. Groehn’s conjoint analysis is best demonstrated by the fact that Dr. Groehn was forced to issue a corrected report in this matter changing the prices he used in his conjoint analysis based on one feature—screen size—unrelated to the patents and irrelevant to the facts of this case. When Dr. Groehn changed his pricing from an unrelated feature, his “incremental profit” values increased [REDACTED]  
[REDACTED], all to correct errors in his pricing based on screen size. Such an absurd shift based on an irrelevant feature proves Dr. Groehn’s conjoint analysis must be excluded under *Daubert*.

Moreover, the conjoint analysis was based on a conjoint survey untethered to the facts of this case, because Dr. Groehn relied **solely** on Headwater’s lawyers to determine that he should test “battery life” and what about it he should test. As a result, Dr. Groehn did not test how consumers actually value the accused features; rather, Dr. Groehn instead asked participants generally about “battery life,” which is not sufficiently tied to the asserted patents. Moreover, Dr. Groehn’s survey attempts to measure the value of battery life over a highly subjective “**standard** battery life,” which even Dr. Groehn admits is defined based only on the perspective of individual survey takers. Dr. Groehn’s survey thus yields an absurd result where the value of a 5% increase in battery life varies widely based solely on the individual survey taker’s conception of “standard” battery life. The inherent unreliability of his conjoint survey similarly warrants exclusion.

**I. DR. GROEHN'S ANALYSIS**

**A. Dr. Groehn Designed His “Battery Life” Conjoint Survey Based only on Input from Headwater’s Lawyers**

Dr. Groehn was asked by Headwater’s lawyers to “measure the economic value of increased battery life in mobile phones designed and manufactured by [Samsung].” Ex. A (Groehn Rpt.) at ¶ 1; Ex. B (Groehn Rough Tr.) at 109:11-18 (“When I was retained by Headwater through counsel to measure the economic value of battery life or improvement in battery life. I had no reason -- no other reason to investigate the economic value of battery life.”). To answer the lawyer’s call, Dr. Groehn chose to perform a conjoint survey and a conjoint analysis. To be clear, Dr. Groehn worked on his conjoint survey and conjoint analysis in a vacuum, never reading the patents, never speaking to Headwater’s technical experts, and not speaking to Headwater’s damages expert during his work. Ex. B (Groehn Rough Tr.) at 20:12-21, 54:19-55:22, 104:2-105:5, 105:10-20. Nor did he review the other experts’ draft or final reports. *Id.* Dr. Groehn admitted he had no knowledge of the name of the accused features, no knowledge of the functionality of the accused features, and he did not consider any accused feature in his conjoint survey or conjoint analysis. *Id.* at 118:9-121:20 (for example, “**Q:** Do you know which features in Samsung’s phones are accused of infringement here? **A:** My assignment was to measure the economic value of battery life. So I don’t know more details than that.”). In short, Dr. Groehn has no idea why he measured battery life, why he measured specific increases in battery life, or how his opinions relate to the case, patents, or features in any way.

**B. Dr. Groehn’s Conjoint Survey**

After conducting a pilot survey that he then largely ignores, Dr. Groehn ran a conjoint survey that sought to evaluate the importance of a 5% and 10% improvement in “battery life” compared to standard battery life. Ex. A (Groehn Rpt.) at ¶¶ 9, 142, 148. According to Dr. Groehn,

conjoint surveys ask a series of questions designed to quantify consumers' demand (not pricing) for those features "[b]y simulating real world and/or hypothetical choices between product features and prices under different levels of information." *Id.* at ¶ 25. The survey should thus "mimic a real-world purchasing scenario that induces respondents to make purchasing choices as they would in the marketplace." *Id.* at ¶ 83. From his survey, Dr. Groehn intended to analyze the incremental profit derived from allegedly using the patented inventions in its accused products. *Id.* at ¶ 15.

Here, Dr. Groehn selected five "decoy" or "dummy" attributes for comparison to the attribute the lawyers told him to value—battery life. Ex. A (Groehn Rpt.) at ¶¶ 62-76, Table 3. Of particular note in this case, Dr. Groehn selected screen size and memory as "decoy" attributes, both of which he admits are the actual drivers of price differentiation in smartphones. Ex. B (Groehn Rough Tr.) at 80:23-81:11. For the decoy attribute in the conjoint survey, Dr. Groehn included multiple levels from which survey takers would be asked to select discrete preferences. For the "battery life" attribute at the center of his assignment, however, Dr. Groehn took a different approach—rather than including actual values such as the advertised battery life in hours, he asked participants to consider undefined "standard battery life," "battery life increased by 5% under normal usage," and "battery life increased by 10% under normal usage." Ex. A (Groehn Rpt.) at ¶ 72, Table 3.<sup>1</sup> Critically Dr. Groehn did not define the term "standard battery life" for survey takers or ask them what their understanding of the term was. Ex. B (Groehn Rough Tr.) at 173:13-174:24.

### **C. Dr. Groehn's Conjoint Analysis**

Dr. Groehn used the results of his survey to conduct a conjoint analysis (here, by

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<sup>1</sup> As Headwater's Mr. Kennedy testified, standard battery life "can mean different things to different people and I think that's why it needs to be clear what it is you're talking about when you say standard life." Ex. C (Kennedy Rough Tr.) at 141:11-22.

calculating part-worths, running a regression, and generating demand curves) to allegedly illustrate the “incremental profit”<sup>2</sup> Samsung could receive for improvements in battery life of 5% to 10% above “standard battery life.” Ex. A (Groehn Rpt.) at ¶¶ 123-142. This is precisely what **Dr. Groehn’s** cited literature cautions that conjoint analysis should not be offered for. Ex. D (Allenby 2019) at -81 (“[i]t should be emphasized that conjoint analysis can only estimate demand. Conjoint survey data, alone, cannot be used to compute market equilibrium outcomes such as market prices...”). In fact, Dr. Groehn acknowledges in his report: 1) battery life is “clearly interdependent” with other features like battery capacity (which was **not** included in his study), Ex. A (Groehn Rpt.) at ¶ 145; and 2) one Samsung internal conjoint analysis showed a

than his results, *id.* ¶¶ 144-145. He also admits that, in contrast to his use of conjoint analysis, Samsung. Ex. B (Groehn Rough Tr.) at 135:2-136:4. In the face of these admissions, he still “carefully analyzed” the prices of the phones and then originally concluded that Samsung earned an “incremental profit” per phone of on battery life. Ex. E (Groehn Redlines) at ¶ 65, Table 6.

#### **D. Dr. Groehn’s Corrected Report**

On April 22, 2024, however, Headwater served an “amended” report for Dr. Groehn together with an “Errata Statement” that radically changed his conclusions.<sup>3</sup> Dr. Groehn admitted that he was forced to change “the Price Levels set out in Table 3 [of his opening report] and used

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<sup>2</sup> Dr. Groehn admits he assumed an “incremental cost” of **zero**. Ex. B (Groehn Rough Tr.) at 125:4-12.

<sup>3</sup> The Court denied Samsung’s motion to strike the untimely corrected reports. Dkt. No. 217. As allowed by the Court in that same Order, this motion is instead focused on the opinions found within the corrected reports.



in [his] survey analysis code” because they did “not reflect the Levels [actually] used in the survey.” Ex. F (Groehn Errata Stmt.) at ¶ 2. Even though Dr. Groehn said he “carefully analyzed” the prices in his original report, Dr. Groehn instead “left values in these fields from a prior, unrelated study.” Dkt. 207-1 (Groehn Decl.) at 1-2. At deposition, Dr. Groehn explained the prices left in the Mathematica program were from the same conjoint analysis on the same phones from a prior case. Ex. B (Groehn Rough Tr.) at 63:23-64:16, 93:1-8. In that prior case he **chose** not to test screen size as a decoy attribute for the same phones whereas he chose to test screen size as a decoy attribute here. In other words, he chose to include screen size as a “decoy” attribute on the same phones even though screen size is unrelated to the patents in this case. Ex. B (Groehn Rough Tr.) at 91:13-93:8; *id.* at 80:23-81:11. Changing this one “decoy” attribute in his conjoint analysis resulted in wildly inflated numbers even though the feature of interest, battery life, did not change at all. Ex. E (Groehn Redlines) at ¶ 65, Table 6 (changing the range of alleged potential incremental profit per unit for levels of battery life from [REDACTED]).

## II. LEGAL STANDARD

Under Federal Rule of Evidence Rule 702, an expert may offer opinion testimony if “the testimony is based on sufficient facts or data,” “the testimony is the product of reliable principles and methods,” and “the expert has reliably applied the principles and methods to the facts of the case.” Fed. R. Evid. 702. The Rule “assign[s] to the trial judge the task of ensuring that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” *Daubert v. Merrell Dow Pharms. Inc.*, 509 U.S. 579, 594, 597 (1993). As part of that analysis, courts consider “the known or potential rate of error” and the “maintenance of standards controlling the technique’s operation,” as well as whether the “technique is ‘generally accepted’ as reliable in the relevant scientific community.” *Id.* at 584, 593-94; *see also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 145 (1999).

Fed. Rule of Evid. 702 was recently modified to confirm that the proponent of the testimony bears the burden of establishing the testimony “is more likely than not . . . the product of reliable principles and methods.” Rule of Evid. 702 & subd. (b)–(c). The Advisory Committee Notes distinguishes the prior rule noting, “many courts have held that the critical questions of the sufficiency of an expert’s basis, and the application of the expert’s methodology, are questions of weight and not admissibility. These rulings are an incorrect application of Rules 702 and 104(a).”

### III. ARGUMENT

#### A. **Conjoint Analysis Cannot Reliably Identify the Incremental Profit of One Feature in a Complex Product in a Complex Market**

According to scientific articles cited by Dr. Groehn, Dr. Groehn’s conjoint (regression) analysis cannot reliably identify the “pricing” or “incremental profit” of an individual feature in the complex real-world market for smartphone devices. *See Daubert* at 593-94. In fact, Dr. Groehn admitted that no smartphone maker in the world uses conjoint analysis the way he proposes. Ex. B (Groehn Rough Tr.) at 121:22-122:4 (“I believe economic value of battery life to the manufacturer is something specific to patent cases and would probably not be calculated in the normal course of business.”). As Dr. Groehn’s **own** sources state unequivocally, “[i]t should be emphasized that conjoint analysis can **only** estimate demand. **Conjoint survey data, alone, cannot be used to compute** market equilibrium outcomes such as **market prices....**” Ex. D (Allenby 2019) at -81 (emphasis added). As another expert stated in another patent litigation about his own similar conjoint analysis, “[i]t is important to recognize that these values do not represent the actual amounts consumers would be willing [to] pay for the inclusion of the patented features in a competitive market. It would be incorrect to suggest that these four patented features alone are responsible for \$50.68 of the price of a GPS system. Price is primarily determined by three factors: consumer value, producer costs, and competition. I studied only one, consumer value.”

[REDACTED]

*Visteon Glob. Techs., Inc. v. Garmin Int'l, Inc.*, No. 10-CV-10578, 2016 WL 5956325, at \*7 (E.D. Mich. Oct. 14, 2016) (even with expert's acknowledgement of this foundational limitation of conjoint analysis, court still excluded conjoint analysis as unreliably applied to stand for price without proper adjustments).

Likewise here, Dr. Groehn has only studied consumer value in his conjoint analysis yet his conclusions are in terms of real-world dollars for real-world phones. His analysis does not take into real account costs nor competition—the key elements necessary to actually determine real-world market prices in this particularly complex, nuanced market for smartphones. Indeed, Dr. Groehn's cited source again confirms that the calculations he performed in his regression does not account for market competition. Ex. D (Allenby 2019) at -89 (“A monetary conversion of the part-worth of a product feature, however, is not sufficient for measuring economic value because it does not consider the effects of competitors in the market.”) Nothing in Dr. Groehn's regression analysis adjusts for costs and real-world market competition for many reasons.<sup>4</sup> Dr. Groehn's survey and subsequent analysis do not recreate the actual competition in the market because the survey does not account for different prices across different retailers of the same smartphones (Ex. B (Groehn Rough Tr.) at 177:3-180:22 (admitting “we don't need to get the prices exactly right...”)); testing less than all of the features that are known to motivate customer choice in the smartphone market including numerous non-patented features (Ex. A (Groehn Rpt.) at Fig. 13 (citing Samsung internal study [REDACTED]

[REDACTED]); and improperly skewing the primary driver of market demand, brand (by combining brand with model, offering

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<sup>4</sup> Mr. Kennedy's offered calculations do not adequately account for costs or competition of the relevant market either (again, similar to *Visteon Global*), as set out in Samsung's separate motion as to Mr. Kennedy's opinions.

only one flagship model per brand), (Ex. A (Groehn Rpt.) at Fig. 12 (citing Samsung internal study [REDACTED])). Regression calculations cannot correct market-divorced survey results such that they could even **estimate** actual market preferences. Ex. D (Allenby 2019) at -81 (“Conjoint practitioners have chosen the unfortunate term ‘market simulation’ to describe demand predictions based on conjoint analyses. These practices are not simulations of any market outcome and must be understood for their limitations . . . .”); *see also id.* (“Even with existing products for which marketplace data **is** observed, there are many situations in which it is not possible to identify consumer preferences.” (emphasis added))).

Just as in *Visteon Global*, “it is undisputed, that Dr. [Groehn’s] study did not attempt to determine a real world price for the [] patented features, and did not endeavor to value any non-patented features or to determine the value of the [] patented features relative to the multitude of non-patented features in the accused devices,” therefore Dr. Groehn’s conjoint analysis cannot be admissible here because his results are applied in a manner inconsistent with accepted methodologies in the field of economics. *Visteon Glob.*, 2016 WL 5956325, at \*6. The Federal Circuit “has consistently held that “a reasonable royalty analysis requires a court to ... carefully tie proof of damages to the claimed invention’s footprint in the market place,” which Dr. Groehn’s analysis does not do. *Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1327 (Fed. Cir. 2014).

**B. Dr. Groehn’s Reasons for Correcting His Report Proves the Inherent Unreliability of His Conjoint Analysis**

Perhaps the clearest indication of the unreliability of Dr. Groehn’s analysis is evidenced by the fact that his incremental profit price analysis [REDACTED] between his opening report and corrected report, based on his use of a different “decoy” or “dummy” variable. Ex. B (Groehn Rough Tr.) at 21:10-22:8, 91:13-93:8; Ex. F (Groehn Errata Stmt.) at ¶ 2. During his deposition,

Dr. Groehn confirmed the source of the price shift from his original report was actually attributable to his use in this survey of the attribute of screen size. Ex. B (Groehn Rough Tr.) at 63:23-64:16; 93:1-8. Dr. Groehn did not test different screen sizes in his “prior case” (where the inadvertently-used numbers came from), but he chose to include screen size in this survey as a “decoy” or “dummy” attribute.<sup>5</sup> Despite it being a dummy attribute that is unrelated to the “battery life” attribute, Dr. Groehn admitted that screen size increases prices of smartphones. Ex. B (Groehn Rough Tr.) at 91:13-93:8; *id.* at 80:23-81:11. Dr. Groehn did not explain why he chose to include screen size in this case even though it is unrelated to the asserted patents. But it is clear that the dramatic changes in his results are attributable to price changes required by this decoy attribute, which is not tied to any alleged patent value or benefit.<sup>6</sup> For instance, had Dr. Groehn added another decoy attribute (i.e., a feature not connected to any alleged patent value or benefit) that does not directly change device price (like processing speed or screen resolution), his calculations would not have required correcting, and his **original** alleged incremental profits would hold. This dramatic shift in results caused by addition of decoy attributes shows the lack of economic reliability of his entire analysis and approach, indicating a high likelihood of lack of predictive value and erroneous estimates. *Kumho Tire*, 526 U.S. at 145 (expert methodologies must be examined in light of “known or potential rate of error” and the “maintenance of standards”).

Dr. Groehn’s resulting conjoint analysis based on the “corrected” prices, resulted in profit premium values that increased [REDACTED], which subsequently caused Mr. Kennedy to increase his

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<sup>5</sup> Decoy variables, or dummy variables, are the other variables within a conjoint survey that are not the feature of interest. They are included generally to provide a balanced testing of different attributes and to avoid focalism bias toward the feature of interest, which could lead to overvaluing the feature of interest. *See, e.g.*, Ex. B (Groehn Rough Tr.) at 92:12-25, 140:1-6.

<sup>6</sup> Dr. Groehn goes so far as to admit that “Profitability of screen size is not a consideration that is important for my work in this matter.” Ex. B (Groehn Rough Tr.) at 93:16-94:24. Yet also admits screen size feature dramatically increased his alleged profit for “battery life.” *Id.* at 91:13-93:8.

damages demand by [REDACTED]. See Ex. E (Groehn Redlines) at Table 6; compare Ex. G (Kennedy Opening Rpt. Ex. 1) with Ex. H (Kennedy Corrected Rpt. Ex. 1). Specifically, Dr. Groehn's corrections demonstrate that the 10% average change in smartphone prices by Dr. Groehn in his analysis resulted in a 130% change in his overall incremental profit calculations. Ex. E (Groehn Redlines) at Table 6. Mathematical errors and the use of flawed data can be significant in the *Daubert* calculus. See, e.g., *Dart v. Kitchens Bros. Mfg. Co.*, 253 F. App'x 395, 398 (5th Cir. 2007) (mathematical errors in underlying calculations was one reason district court found expert's methodology unreliable, warranting exclusion). This extreme mathematical sensitivity to input changes, especially the choices of “**decoy**” variables unrelated to the patents, proves the unreliability of his analysis, demanding exclusion. Ex. B (Groehn Rough Tr.) at 23:8-16.

**C. Dr. Groehn's Survey Was Divorced from the Patented Technology**

Beyond the unreliability and unacceptability of the underlying methodology, the Court should strike Dr. Groehn's opinions in their entirety because his survey sought to test the value of an increase in “battery life” to consumers, but “battery life” is not a patented feature. A conjoint survey is useless if, as here, the benefit evaluated by the survey is not one provided by the asserted patents. See *Fractus, S.A. v. Samsung*, No. 6:09-CV-203-LED-JDL, 2011 WL 7563820, at \*1 (E.D. Tex. Apr. 29, 2011) (excluding conjoint surveys that did “not measure the value of Plaintiff's” patented type of internal antenna, “but merely measure the perceived consumer value of cell phones with **any** internal antennas” (emphasis added)). Dr. Groehn has no admissible basis for opining that the patents provide any increase in battery life since he admitted his assignment only came from **Headwater's lawyers**. Ex. B (Groehn Rough Tr.) at 109:11-18 (“I was retained by Headwater through counsel to measure the economic value of battery life or improvement in battery life. I had no reason – no other reason to investigate the economic value of battery life.”); see also, e.g., *Matter of James Wilson Assoc.*, 965 F.2d 160, 172-73 (7th Cir. 1992) (“[T]he judge

must make sure that the expert isn't being used as a vehicle for circumventing the rules of evidence."). Dr. Groehn made clear that his only assignment was to "measure the economic value of increased battery life in mobile phones" at the lawyer-assigned range of 5-10%. Ex. B (Groehn Rough Tr.) at 106:2-14; 123:5. Dr. Groehn conceded his analysis was divorced from the facts of the case: admitting he never reviewed the patents in this case, does not know the subject matter of the patents, and **never spoke to either of Headwater's technical experts or reviewed the opinions set forth in their report.** *Id.* at 104:2-3; 106:2-14; 123:2-5. Fatally, Dr. Groehn did not verify his inputs or results with any Headwater expert.

Dr. Groehn's failure to ground his analysis in any of the realities of this case is consequential. As Dr. Groehn admitted, there are many factors that affect battery life that are not at all related to the asserted claims, and Dr. Groehn has not shown that the generic increased battery life he tests has any ties to the patents. Ex. B (Groehn Rough Tr.) at 167:25-168:14; Ex. C (Kennedy Rough Tr.) at 141:11-22 ("battery life" means different things to different people, and therefore must be defined in the survey for it to be reliable).<sup>7</sup> However, what is clear is that the asserted patents do not "have a direct, measurable improvement to the broad concept of 'battery life'" over what is available by other systems and techniques. Ex. I (Schonfeld Rpt.) at ¶ 636. In fact, there is even evidence that "the Asserted Patent claims could also be implemented in such a way as to drain battery life." *Id.* at ¶ 636.

Acting in their role as gatekeeper, courts across the country have excluded conjoint surveys for methodological flaws such as the disparity here between the patented features and the subject

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<sup>7</sup> See also Ex. I (Schonfeld Rpt.) at ¶ 643 ("[T]he long list of variables that contribute to battery life also suggests that there are any number of ways that individual mobile device users can attempt to incrementally change their mobile device battery life, which do not relate to the Asserted Patents.")

of the survey. *Unwired Planet, LLC v. Apple Inc.*, No. 14-cv-04134-VC, 2017 WL 589195, at \*1 (N.D. Cal. Feb. 14, 2017) (excluding conjoint survey results and all damages analysis derived therefrom because survey’s feature descriptions were so different from the patented features that survey was effectively “targeted at an invention other than the one at issue in this litigation”); *Fractus, S.A.*, 2011 WL 7563820, at \*1 (same); *cf. Apple, Inc. v. Samsung Elecs. Co.*, No. 12-CV-00630-LHK, 2014 WL 794328, at \*18 (N.D. Cal Feb. 25, 2014) (noting that, where a survey’s description of patented features “may vary so much from what is claimed that the survey no longer relates to any issue in the case and is not relevant and, ergo, non-helpful [to the trier of fact],” the survey “must be excluded under Rule 702(a).”). Because there is no evidence that Dr. Groehn analyzed or even attempted to demonstrate that his surveyed “battery life” is the specific incremental benefit conferred by the patents, his analysis should be excluded.

**D. The Survey Is Unreliable Because “Standard” Battery Life Has No Objective Meaning**

Dr. Groehn did not test “battery life” using any real metric, instead presenting that key attribute as a subjective “standard battery life,” which makes his entire opinion unreliable. Specifically, Dr. Groehn’s survey asked people to choose between “standard battery life,” “battery life increased by 5% under normal usage,” and “battery life increased by 10% under normal usage.” Without clear, objective definitions of either his feature of interest (“battery life”) or of the levels tested (“standard,” “5% more,” “10% more”), the survey fails to meet the basic best practices required and regularly used by survey practitioners in the field. The failure to clearly, objectively define his terms causes his survey to yield useless results in which the value of a supposed boost of 5% or 10% in battery life varies depending on the subjective “standard” baseline chosen for each survey taker and the ability of each respondent to accurately calculate a specific understanding of 5% or 10% more than their random baseline.



**1. Dr. Groehn’s Survey Did Not Define “Standard” Battery Life, Leaving Each Survey Respondent to Attribute Their Own, Subjective Meaning**

Dr. Groehn’s survey presented respondents with three choices for the “battery life” feature of interest: “standard battery life,” “battery life increased by 5% under normal usage,” or “battery life increased by 10% under normal usage.” Ex. A (Groehn Rpt.) at ¶ 72. Dr. Groehn did not tell survey takers how to measure “standard” battery life even though “standard” has no commonly accepted meaning, resulting in what Dr. Groehn admitted was a different perception of “standard” for each survey taker. Ex. B (Groehn Rough Tr.) at 168:1-14; 168:16-169:5. Even Headwater’s Mr. Kennedy concedes that “standard battery life” means different things to people, and therefore **must** be defined in the survey for it to be reliable. Ex. C (Kennedy Rough Tr.) at 141:11-22.

As Dr. Groehn concedes, battery life varies considerably based on use of the phone, screen size, features used, etc. Ex. B (Groehn Rough Tr.) at 37:24-38:14 (e.g., explaining capacity of the battery, efficiency, software, screen size, all have potential impact on battery life). But his survey did not instruct participants on any number of hours, or minutes, or days, of battery life that should be considered “standard.” *Id.* at 171:17-172:11. Thus, the survey provides the participants with no way of understanding if “standard battery life” would be suitable for their purposes or if they might need or want something more. Instead, Dr. Groehn admits that every individual survey taker may have had his or her own, different understanding of the battery life that is “standard.” *Id.* at 168:16-22 (“[T]he standard . . . battery life [is what] a respondent would expect.”)

Juxtaposing how Dr. Groehn described “battery life” against other attributes further underscores the survey’s unreliability. For other features, Dr. Groehn provided precise, absolute quantities survey takers frequently encounter and evaluate in the real marketplace: Brand/Model (Apple iPhone 15, Samsung Galaxy S24, Motorola Edge), Storage Capacity (128 GB, 256 GB, 516 GB), Low Light Camera (Yes, No), Water Resistance (IP 66, IP 68), and Screen Size (6.1

inches, 6.2 inches, 6.6 inches, 6.7 inches, 6.8 inches (coinciding with brand/model)), and prices. But for battery life, Dr. Groehn took a markedly different approach, offering instead the ambiguous “standard” battery life as a baseline, and a “5% more” or “10% more” multiplier. In the real marketplace, smartphone buyers usually encounter information about battery life in the length of time on a single charge (not in percentage increases), which Dr. Groehn appears to understand. Ex. B (Groehn Rough Tr.) at 112:15-113:8, 116:3-16; Ex. A (Groehn Rpt.) at Fig. 17. Samsung, for example, advertises battery in terms of hours or days. Ex. B (Groehn Rough Tr.) at 116:3-16. Indeed, Headwater’s damages expert, Mr. Kennedy, testified that his “standard battery” life is measured in terms of hours (or minutes) and often changes based on his usage. *See* Ex. C (Kennedy Rough Tr.) at 143:2-5 (“Q How long is the standard battery life on your phone? A I don’t know. I would estimate two or three hours based on my experience.”); *see also id.* at 143:10-22.

Yet, Dr. Groehn chose to **not** present the levels of battery life in terms of hours. The vague, subjective framing of battery life levels, which leaves the definition up to each individual survey respondent, renders the subjective results meaningless to determine quantifiable “profit” or “price”, and Dr. Groehn’s opinions unreliable, particularly considering that advertised battery life exists for the phones he tested. Ex. B (Groehn Rough Tr.) at 172:22-173:14.

## **2. The Supposed Incremental Value of a “5%” Or “10%” Is Equally Vague, Rendering the Results Unreliable**

The practical implication of Dr. Groehn’s failure to define a “standard” battery life is to confirm the unreliability of his methods. Dr. Groehn alleges that the difference between a 5% increase in battery life versus a 10% increase is not linear, and would instead vary wildly depending on the “standard” battery life. Ex. B (Groehn Rough Tr.) at 168:1-172:3. According to Dr. Groehn, if a smartphone has a 5% increase in battery life above “standard” battery life, Samsung makes at least [REDACTED] in incremental profit. Ex. A (Groehn Rpt.) ¶ 142, Fig. 32, Table

6. If Samsung provides a 10% increase above “standard” battery life, then Samsung’s incremental profit supposedly jumps up to at least [REDACTED] (and potentially as high as [REDACTED]). *Id.* In other words, the first 5% increase above “standard” supposedly produces [REDACTED] in extra profit per unit, whereas the second 5% (increasing from 5% to 10% above “standard”) yields an additional [REDACTED] to [REDACTED] in profit (i.e., [REDACTED]). That is one and a half to three times the increase in profit for essentially the same battery life increase, based only on the arbitrary selection of the “standard” battery life that serves as a starting point for the increase. Dr. Groehn does not explain why he thinks consumers are willing to pay more for the second 5% increase for the very same phone than the first 5% increase, regardless of what battery life is considered to be “standard.” That disparity alone is suspect, but it becomes entirely irrational when one considers the impact of a subjective “standard” battery life, which warrants exclusion. *Oracle Am., Inc. v. Google Inc.*, No. C 10-03561 WHA, 2012 WL 850705, at \*10-11 (N.D. Cal. Mar. 13, 2012); *Virnetx, Inc.*, 767 F.3d at 1329.

#### IV. CONCLUSION

For the foregoing reasons, Samsung respectfully requests the Court exclude Dr. Groehn’s opinions, which are based on his conjoint survey and analysis.

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Respectfully submitted,

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**CERTIFICATE OF CONFERENCE**

Counsel for Plaintiff and counsel for Defendants have met and conferred in compliance with Local Rule CV-7(h). Plaintiff opposes this motion.

/s/ Thomas H. Reger II  
Thomas H. Reger II

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing document was filed electronically in compliance with Local Rule CV-5 on May 16, 2024. As of this date, all counsel of record had consented to electronic service and are being served with a copy of this document through the Court's CM/ECF system under Local Rule CV-5(a)(3)(A).

/s/ Thomas H. Reger II  
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**CERTIFICATE OF AUTHORIZATION TO SEAL**

The undersigned hereby certifies that pursuant to the protective order in the above-captioned case, this document contains confidential information. Accordingly, this document is to be filed under seal.

/s/ Thomas H. Reger II  
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